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TWO CARTOGRAPHIC PRODUCTIONS.

To the Secretary American Geographical Society :

DEAR SIR:

Referring to the letter of Mr. O. B. Ireland, published in No. 2 of this year's BULLETIN of the Society, in which he complains of the inaccuracy of geographical maps published by some of the leading railroad companies of the United States, and points out the misinformation likely to be inculcated into the minds of the young students from the study of the same, may I be permitted to draw attention to two most excellent cartographic productions, from the study and use of which I have derived much profit and no end of enjoyment in the pursuit of geographical studies?

Among makers and publishers of maps in Europe none are better known than the firm of JUSTUS PERTHES, in Gotha, Germany. Some of the most famous geographers and cartographers have worked for this publishing house, and names such as Stuelpnagel, Berghaus, Petermann, Stieler, Sydow and, more recently, Habenicht, Vogel, Wagner, Lueddecke, and Langhans are too familiar to need further mention. From this house came to us the well-known *large Stieler Atlas*, and the equally good small *Perthes pocket atlases* (five in number), which are designated by Mr. Hugh Robert Mill in his recent "*International Geography*" as the MOST PERFECT POCKET ATLASES KNOWN.

The firm of Justus Perthes has recently published two large charts of the world, one of which appeared a year or two ago in an improved edition under the title "*Dr. Berghaus' Chart of the World*," revised and brought up to date by H. Habenicht and B. Domann. The *second map*, published this year, is compiled by *Dr. Paul Langhans*, the author of a very useful *Commercial Atlas of the World*.

The Berghaus Chart gives a comprehensive exhibit of the chief regular commercial routes traversed by ocean steamers and sailing vessels of all nations, also the principal overland railroad lines, the telegraph and ocean cable systems, etc. In order to be of universal service in all countries of the globe, *the map was edited in the English language*. It forms a handy and indispensable companion in the offices of merchants, railroad men, maritime offices, civil engineers' offices, but is likewise adapted for libraries, colleges, schools, as well as on board of vessels of the merchant marine and navy. The chart is drawn on Mercator's projection, owing to which fact the countries of the higher latitudes are shown on a greatly increased scale, and with a great fullness of detail.

The study of geography may be pursued either with the assistance of a terrestrial globe or by using reference maps and atlases. Large wall maps are, in many respects, superior to large atlases, because one is enabled to find everything on one map, without being compelled to turn over the pages of sometimes cumbersome books. Of maps suitable for applied or commercial geography, those based on Mercator projection are, for many reasons, the handiest. While they do not represent the areas on a uniform scale—those between 60 degrees latitude and the poles becoming very much exaggerated in size—the proportion between width and length is everywhere correctly maintained. As is well known, the areas increase in charts drawn on Mercator's projection in proportion to the square of the secant of the latitude ϕ , or as $1 : \cos.^2 \phi$; *i. e.*, degrees of latitude are increased on the map in the same proportion as the degrees of longitude diminish on the sphere. Hence the Mercator projection shows countries and oceans truthfully as to form, while the scale varies in different parts of the map. Such charts are particularly adapted for purposes of navigation,

for, owing to the fact that the meridians and parallels of latitude are drawn in straight lines, the course of a ship between two ports can be also drawn straight.

The Berghaus chart is beautifully engraved and shows the chief topographical features of the land, besides being full of information regarding the oceans. On the land the map shows the rivers, canals, cataracts, rapids, swamps, docks, coaling stations, treaty ports, altitudes in metres above sea-level. The different colonial possessions—British, German, French, Portuguese, Italian, Dutch, Danish and Spanish—are shown in different colors. On the water it shows the routes actually used by the principal steamship lines and sailing vessels, which are numbered and arranged in a list by continents and nationalities. It gives the tracks of outward and homeward-bound steamers, including the distances in nautical miles and the time required for the voyage; the summer and winter routes of sailing vessels, the warm and cold ocean currents, with their mean velocity; the limit of pack ice, the average and extreme limit of drift ice or of icebergs; the reefs, sandbanks and shoals dangerous to navigation, the occurrence of sea-weed, the date boundary line in the Pacific Ocean, the 200-metre (approx. 100 fathoms) line of sea soundings.

A smaller inset map gives a good representation of the countries and seas around the poles, drawn on Lambert's polar projection; another smaller map shows the principal telegraph and cable lines, a third one is entitled a wind chart. The lines of magnetic variation are also indicated, also the hours of high water, the surf-bound coasts, strong tidal streams, etc. The longitude is designated east and west from Greenwich, by degrees and also in time, and on the latitudes the duration of longest days in months, days and hours is given. In the Berghaus chart the American continent is placed in the centre of the map, which when mounted measures 61½ by 37 inches, but which can also be had as a folded map, 8 by 10 inches in size, the price varying from 20 to 24 marks.

The second wall map, by Langhans, which is 63 inches by 42 inches in size, mounted, is somewhat cheaper, being printed instead of engraved, the price, mounted, being 12 marks. On this chart, which is also represented on Mercator's projection, the longitude of Greenwich, or the zero line, is placed in the centre of the map, and on the left is shown the American continent and a part of the Pacific Ocean, while to the right we find Asia and Australia, and the western half of the Pacific Ocean, including Japan and the Philippine Islands. Though this map has special reference to German commerce and trade, and to the German colonies, it is equally well adapted for general geographical purposes. The Berghaus chart is, perhaps, more replete with information, but on the other hand the Langhans chart is much more clear and comprehensive, the lettering is large and more easily read at a distance, and the author seems to have studied hard to omit all unnecessary matters and to include all points of chief importance. For German mercantile firms this map is invaluable, because it gives not only the principal German steamer lines, but also all German consulates, all Custom-houses and treaty ports. In showing the principal rivers the aim was in each case to show by special marks the limits of their navigability.

It is difficult to express a preference between these two well-executed new maps, for each has its special adaptation and its advantages. Readers interested in geography would do well to examine and compare both maps before making a choice.

Very truly yours,

WM. PAUL GERHARD, C.E.,

Member American and National Geographic Societies.